

2/18/87

NOTICE OF THE NAMING AND RELEASE  
OF  
'HOBBLE CREEK' MOUNTAIN BIG SAGEBRUSH (ARTEMISIA TRIDENTATA SSP. VASEYANA)  
FOR  
USE ON MULE DEER AND DOMESTIC SHEEP WINTER RANGES

BY THE  
UTAH AGRICULTURAL EXPERIMENT STATION - UTAH STATE UNIVERSITY  
AND THE  
UNITED STATES DEPARTMENT OF AGRICULTURE -  
FOREST SERVICE - INTERMOUNTAIN RESEARCH STATION  
AND THE  
UTAH STATE DIVISION OF WILDLIFE RESOURCES  
AND THE  
UPPER COLORADO ENVIRONMENTAL PLANT CENTER  
AND THE  
COLORADO AGRICULTURAL EXPERIMENT STATION - COLORADO STATE UNIVERSITY  
AND THE  
IDAHO AGRICULTURAL EXPERIMENT STATION - UNIVERSITY OF IDAHO  
AND THE  
UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

The Utah Agricultural Experiment Station - Utah State University, United States Department of Agriculture - Forest Service - Intermountain Research Station, Utah State Division of Wildlife Resources, Upper Colorado Environmental Plant Center, Colorado Agricultural Experiment Station - Colorado State University, Idaho Agricultural Experiment Station - University of Idaho, and the United States Department of Agriculture - Soil Conservation Service announce the naming and release of 'Hobble Creek' mountain big sagebrush (Artemisia tridentata ssp. vaseyana) for commercial production and marketing of seed and plants. Of 186 big sagebrush strains tested, 'Hobble Creek' is the most preferred by wintering mule deer and ranks high in preference by wintering domestic sheep. What follows is a general description of the 'Hobble Creek' selection. Details are given in the publication: Welch, B. L., E. D. McArthur, D. L. Nelson, J. C. Pederson, and J. N. Davis. 1986. 'Hobble Creek'--A superior selection of low-elevation

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*misspelled*  
*in GRIN*

Creek' persistent vegetative leaves are broadly cuneate to spatulate and are wider than those of both basin and Wyoming big sagebrush. Persistent leaves are  $17.3 \pm 3.1$  mm long and  $5.2 \pm 1.5$  mm wide.

Crushed leaves emit a strong camphorlike fragrance. This fragrance is due to the chemical make up of 'Hobble Creek' monoterpenoids (essential or volatile oils). Total winter monoterpenoid content of 'Hobble Creek' is about 2.09 percent of dry matter. This level is about midrange for other selections of big sagebrush. The winter 'Hobble Creek' profile consists of six monoterpenoids; camphene -- at about 0.05% of dry matter, 1, 8 cineol -- about 0.6%, camphor -- about 1.15%, Beta-thujone -- about 0.10%, Fenchyl alcohol -- about 0.02%, and unknown -- about 0.17%. Pinene is a seventh monoterpenoid that can be found at low levels during other seasons of the year (Cedarleaf et al. 1983). This monoterpenoid profile is characteristic of 'Hobble Creek' and can be used to identify the selection (Welch and McArthur 1981).

'Hobble Creek' starts to flower late July to early August. Seeds which are achenes are mature around the first of December. This selection is one of the latest maturing big sagebrush known to us. The seeds are small. About 1.36 million seeds are needed to make a pound. An acre of wildland (14 to 18 inches of precipitation) 'Hobble Creek' produces about 300 pounds of seed at 10 percent purity. Higher seed yield probably could be obtained through irrigation and fertilization.

The Need: On mule deer (Odocoileus hemionus hemionus) and domestic sheep (Ovis aries) winter ranges, forages are deficient for four nutrients. These

crude protein--11.0 percent of dry matter, (3) phosphorus--0.21 percent of dry matter, and (4) many times above the maintenance requirement for carotene. Also, 'Hobble Creek' lacks compounds that suppress in vitro grass cell wall digestion.

Areas Where It Can Be Grown: 'Hobble Creek' can be grown on sites with the following physical characteristics:

1. Mean annual precipitation of 14 or more inches. This is on the low end of the range for mountain big sagebrush.
2. Deep, well-drained soils with an effective rooting depth of at least 4 feet.
3. Soil no finer than a clay loam (40 percent clay or less). On sites with heavy clay soils 'Hobble Creek' appears to be predisposed to root rot and vascular wilt type pathogens.
4. Soil pH between 6.6 and 8.6.
5. Growing season of 90 days or more.

We do not recommend trying to establish 'Hobble Creek' in Wyoming big sagebrush sites because of shallow soils and low precipitation.

'Hobble Creek' can be established on suitable sites by direct seeding, by transplanting bareroot or containerized stock, and by the mother plant technique.

Seed Source: Breeder seed will be maintained at the breeder block by the Intermountain Research Station, Shrub Sciences Laboratory, Provo, Utah.

Chrysothamnus USDA For. Ser., Intermountain Research Station, Ogden, Utah, Gen. Tech. Rep. INT-200.

Gade, A. E., and F. D. Provenza. 1986. Nutrition of sheep grazing crested wheatgrass versus crested wheatgrass-shrub pastures during winter. J. Range Manage. 39:527-530.

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Welch, B. L., E. D. McArthur, D. L. Nelson, J. C. Pederson, and J. N. Davis. 1986. 'Hobble Creek'--A superior selection of low-elevation mountain big sagebrush. USDA For. Ser., Intermountain Research Station, Ogden, Utah, Res. Pap. INT-370.